Remarks:

The Office Action of July 27, 2000 and the references cited therein have been carefully considered.

In this amendment claim 1 has been amended to correct noted informalities and to avoid possible ambiguities without changing the intended scope of the claim. Particularly, claim 1 has been amended to clearly point out that claimed semiconductor device need only contain one chip. In any case, since as will be clear from the arguments below, the amendments did not in any way affect the issue involved with regard to the patentability of the claims, so that no further search or consideration is required, entry of the amendments is respectfully requested.

In addition to the above, claim 7 has been amended to overcome the Examiner's objection thereto. Therefore, withdrawal of this objection to claim 7 is requested.

The rejection of claim 21 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a manner as to enable one skilled in the art to practice the invention has been noted and is respectfully traversed. In particular, the Examiner has taken the position that the claim limitation "wherein said two-dimensional barcode pattern is formed on said semiconducted chip by photolithography" is not supported by the application. The reason for this rejection is not understood. Photolithography is an old and well-known technique used in the semiconductor art for many purposes as recognized by the Examiner in his rejection of claim 21. In any case, the present application clearly sets forth that the two-dimensional barcode pattern may be formed by photolithography. For example, in addition to a number of further mentions

in application, the use of photolithography for the two-dimensional barcode pattern is specifically described on pages 13 and 14 of the present application beginning with the paragraph on page 13, line 7. It is submitted that the description found on these pages, as well as other mentions in the application, would clearly indicate to one skilled in the art how to form the two-dimensional barcode pattern by photolithography. Accordingly, reconsideration and withdrawal of this ground of rejection is respectfully requested.

The rejection of claims 1-21 under 35 U.S.C. 103(a) as being unpatentable over the Merlin et al. reference in view of the Shamir reference has been noted and as is again respectfully traversed. Initially, it is pointed out that the remarks found in the Amendment filed June 21, 2000 with regard to this same reference and combination of references are still considered to be pertinent here. However, rather repeat same in their entirety, they are incorporated herein by reference.

In urging this ground of rejection, the Examiner has again only generally applied the limitations of the claims to the prior art, and in general has reduced the "invention" to the placing of markings on a wafer to identify a chip on the wafer, with the markings being a barcode. However, it is submitted, that while this may be a very general statement of the invention, this is not the specific invention as defined in the claims. To this end, in discussing the Merlin et al. reference, the Examiner has taken the position that Merlin et al. teaches marking the wafer surface with one or more indicia, but is silent with respect to the ID information being in a two-dimensional barcode pattern; that Shamir teaches an IC wafer including a micro-barcode indicia and an alphanumeric indicia for identification and inventory purposes; that it consequently would have been obvious to one of ordinary in the art at the time the invention was made to employ the

micro-barcode pattern as taught by Shamir in addition to the indicia as taught by Merlin et al.; that to substitute a two-dimensional micro barcode for the one-dimensional micro barcode of Shamir would simply be a mere duplication of elements as taught by the Merlin et al./Shamir combination; and that this would result in the invention as defined in the claims. It is submitted that even if it were obvious to provide the Merlin et al. device with a barcode pattern as taught by Shamir, the result would not be the invention recited in any of the independent claims.

Each of the independent claims specifically recite that the identification information is recorded in a "two-dimensional barcode pattern which is comprised of a plurality of blocks arranged in a predetermined two-dimensional region. As pointed out in the application, by using a two-dimensional barcode as opposed to a one-dimensional barcode, a substantial increase in the amount of data that can be stored in a given area is achieved. None of the cited references, either explicitly or implicitly, discloses a two-dimensional barcode constituted by arraying a plurality of blocks it arranged in a predetermined two-dimensional region. In particular, where is there any teaching or suggestion in any of the references that a two-dimensional barcode would provide any advantage or that there is any problem with regard to the size and space provided by the indicia. In attempting to reject this limitation, the Examiner has simply stated that to substitute a two-dimensional barcode for a one-dimensional barcode would simply be a mere duplication of elements. However, this is clearly not the case. A duplication might be providing two line of one-dimensional barcode instead of one. However, a two-dimensional barcode is a

concept which is not taught, suggested or made obvious by any of the references and is not a mere duplication of a one-dimensional barcode, but rather results in a substantial increase in the amount of data which can be placed in a given region. It is therefore submitted that the use of such a two-dimensional barcode for a specific purpose in connection with semiconductor devices, wherein the regions available for the application of indicia are very small, is not obvious to one skilled in the art from the Merlin et al. and Shamir references which only teach either alphanumeric indicia or a one-dimensional barcode.

In addition to the above, it is submitted that, contrary to the position taken by the Examiner, the device of Merlin et al. does not find direct correspondence in the device according the present invention. As stated by the Examiner "...Merlin et al. teaches of marking the wafer surface with one or more indicia...". In this regard, the Examiner is quite correct in that the indicia of Merlin et al. or a chip 16 are etched into the contacts 12 for the chip, with these contacts being found on the opposite surface of the substrate 15 on which the chip 16 is mounted. However, claim 1 specifically recites that the indicia are found on the chip itself. Since there is clearly no indicia on the chip 16 of Merlin et al., this is an entirely different invention than that recited in claim 1, or claim 11 which likewise specifically require that the two-dimensional barcode pattern be on the chip itself. It is again pointed out that this clearly not the case according to the teaching of Merlin et al. Accordingly, for these additional reasons, it is

submitted that claims 1 and 11 and the claims dependent thereon are allowable over the combination of the Merlin et al. and Shamir patents.

With regards to claims 4, 7, 14 and 16, the Examiner has initially taken the position that although the Merlin et al.-Shamir combination of references do not disclose means for providing ID information on a lead frame and/or surface of resin-sealed semiconductor chip, one skilled in the art would consider putting the ID information on the lead frame and/or resin since they constitute an alternative means for placing or recording the information. It is pointed out, however, that these are not simply alternative locations for the information. Note that each of the claims recites that the information recorded in the different location is different information. In the absence of any showing that the information should be on a lead frame and/or resin package, it is submitted that placing of the specific information at these locations is not obvious from the cited combination of references. In addition, it is noted that claims 14 and 16 (as well as claim 11) are all directed to an information management system, and each requires a "read device" for reading the two-dimensional bar code pattern information, as well as a "management unit" that registers the particular read information and controls individual semiconductor manufacturing processes based upon the registered and read ID information. There is nothing in any of the cited references corresponding to any such "management unit", and accordingly for these additional reasons, claims 14 and 16 (as well as claim 11) are allowable over the combination of the Merlin et al. and Shamir references.

For the above stated reasons, it is submitted that each of the pending claims, i.e., claim 1-21, is allowable over the prior art of record and is in condition for allowance. Such action and the passing of this application to issue therefore are respected requested.

A request for the necessary extension in the period for filing this response, as well as a check in payment of the applicable extension fee are attached.

If the Examiners of the opinion that the prosecution of this application would be advanced by personal interview, the Examiner is invited to telephone undersigned counsel to arrange for such an interview.

Respectfully submitted,

Norman N. Kunitz
(Registration No. 20,586)
VENABLE
Post Office Box 34385
Washington, DC 20043-9998
Telephone: (202) 962-4800
Telefax : (202) 962-8300

NNK/laa
DC2DOCS1\257579